

WHAT IS CLAIMED IS:

1 1. A method of programming a vehicle-based remote control to
2 activate an appliance, the appliance responding to a radio frequency activation signal
3 having characteristics represented by one of a plurality of activation schemes, the
4 method comprising:

5 automatically prompting the user to select one of a plurality of subsets
6 of possible activation schemes;

7 receiving user input selecting a particular subset of the plurality of
8 subsets;

9 for each of at least one activation scheme in the particular subset,
10 transmitting an activation signal having characteristics represented by the activation
11 scheme;

12 receiving user input indicating whether or not the at least one
13 transmitted activation signal successfully activated the appliance;

14 if the user input indicates success, storing data representing the at
15 least one activation scheme associated with one of at least one user activation input
16 channel; and

17 if the user input indicates no success and if the particular subset
18 includes at least one untried activation scheme, repeating transmitting an activation
19 signal and receiving user input indicating success.

1 2. The method of claim 1 wherein automatically prompting the
2 user comprises displaying an image of each possible existing appliance remote
3 control transmitter together with a code representative of that transmitter.

1 3. The method of claim 2 wherein receiving the user input
2 selecting the particular subset comprises receiving the code representative of a user
3 selected transmitter.

1 4. The method of claim 1 wherein automatically prompting the
2 user comprises displaying an image of at least one possible existing appliance remote
3 control transmitter on an in-vehicle interactive display.

1 5. The method of claim 4 wherein the interactive display has at
2 least one selection control, receiving the user input selecting the particular subset
3 comprises receiving a signal from at least one selection control indicating selection
4 of a displayed image.

1 6. The method of claim 1 wherein automatically prompting the
2 user comprises asking the user to speak a name associated with the appliance.

1 7. The method of claim 1 wherein receiving the user input
2 selecting the particular subset comprises receiving a spoken name associated with
3 the appliance.

1 8. The method of claim 1 wherein automatically prompting the
2 user comprises signaling the user to enter on a telephone keypad at least a portion
3 of a name associated with the appliance.

1 9. The method of claim 1 wherein receiving the user input
2 selecting the particular subset comprises receiving characters entered on a telephone
3 keypad indicating at least a portion of a trade name associated with the appliance.

1 10. The method of claim 1 further comprising:
2 determining that the particular subset selected by the user includes a
3 rolling code scheme; and
4 automatically prompting the user to put the appliance in learn mode.

1 11. The method of claim 1 wherein the particular subset selected
2 by the user includes a fixed code scheme, the method further comprising
3 automatically prompting the user to manually enter the fixed code.

1 12. The method of claim 1 wherein the particular subset selected
2 by the user includes a fixed code scheme, the method further comprising

3 automatically prompting the user to operate an existing transmitter, the existing
4 transmitter operative to transmit an activation signal activating the appliance.

1 13. The method of claim 1 wherein the particular subset selected
2 by the user includes a fixed code scheme, the method further comprising
3 transmitting a sequence of activation signals, each activation signal in the sequence
4 based on a different fixed code value.

1 14. The method of claim 1 wherein, if the user input indicates no
2 success and if no other activation scheme in the particular subset remains, switching
3 to a help mode.

1 15. A method of activating an appliance comprising:
2 when in a learn mode, receiving first user input selecting one of a
3 plurality of possible appliance classes;
4 transmitting at least one activation signal, each transmitted activation
5 signal based on characteristics of a member of the selected class;
6 storing data representing characteristics of at least one transmitted
7 activation signal based on receiving second user input indicating that at least one of
8 the at least one transmitted activation signal activated the appliance, the data
9 associated with one of at least one activation inputs;
10 when in an operate mode, receiving one of at least one activation
11 inputs;
12 retrieving stored data representing activation signal characteristics;
13 and
14 transmitting at least one activation signal based on the retrieved data.

1 16. The method of claim 15 further comprising displaying
2 information about the appliance classes on an in-vehicle display.

1 17. The method of claim 15 further comprising providing
2 information about the appliance classes through an in-vehicle speaker.

1 18. The method of claim 15 wherein the first user input is
2 received through at least one activation input.

1 19. The method of claim 15 wherein the first user input is
2 received through a telephone keypad.

1 20. The method of claim 15 wherein the first user input is
2 received through a speech recognizer.

1 21. The method of claim 15 wherein the first user input is
2 received through an instrument panel control.

1 22. The method of claim 15 further comprising:
2 determining that the selected class describes at least one rolling code
3 appliance; and
4 prompting the user to put the appliance in learn mode.

1 23. The method of claim 15 wherein the selected class describes
2 at least one fixed code appliance, the method including prompting the user to
3 manually enter an appliance fixed code value.

1 24. The method of claim 15 wherein the selected class describes
2 at least one fixed code appliance, the method including prompting the user to operate
3 an existing transmitter, the existing transmitter operative to transmit an activation
4 signal activating the appliance.

1 25. The method of claim 15 wherein the selected class describes
2 at least one fixed code appliance, transmitting at least one activation signal
3 comprises transmitting a plurality of activation signals, each transmitted activation
4 signal having a different fixed code value.

1 26. The method of claim 15 further comprising changing to a help
2 mode if an activation signal for each member of the selected class has been
3 transmitted and the second user input is not received.

1 27. A programmable appliance remote control comprising:
2 a user interface;
3 a transmitter operative to transmit radio frequency activation signals;
4 a memory holding a plurality of activation schemes, each activation
5 scheme assigned to one of a plurality of subsets; and
6 control logic operative in a learn mode and an operate mode, the
7 control logic in the learn mode accepting a subset selection, transmitting at least one
8 activation signal having characteristics specified by the selected subset, accepting
9 a user selection input selecting at least one activation scheme in response to the at
10 least one transmitted activation signal, and storing data representing the user
11 selection associated with one of at least one activation input, the control logic in an
12 operate mode receiving an activation input through the user interface and
13 transmitting at least one activation signal using stored data based on the received
14 activation input.

1 28. The programmable appliance remote control of claim 27
2 wherein the control logic is linked to at least one interface device through a vehicle-
3 based bus.